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July 6, 2001

FEDERAL COMMUNICATIONS COMMISSION  
OFFICE OF THE SECRETARY

The Honorable Daniel S. Goldin  
Administrator  
National Aeronautics and Space Administration  
Two Independence Square  
300 E Street, S.W.  
Washington, D.C. 20546

Reference: Pending FCC Rule-making (ET Docket 98-153) on a Fast-Track  
Subject: Request for Unified Administration Position on FCC UWB Rule-Making

Dear Administrator Goldin:

The Signatories listed above bring to your attention the following joint comments on the national policy consequences for space, national security, public safety, and the economy that will be imminently decided in the above proceeding.

The Federal Communications Commission (FCC) is considering a rule to allow emerging ultra-wideband (UWB) transmitters and networks to operate on an unlicensed basis under Part 15 of its rules governing consumer devices. Since UWB devices send pulses of energy across extremely wide sections of radio spectrum, this pending rule could allow UWB operations to overlay all existing systems and services operating in 1 to 6 GHz. Most importantly, this spectrum sharing proposes a historic rule change to remove the prohibition on intentional transmissions into and across all restricted frequency bands, including those used by space-based services, such as the Global Positioning System (GPS), defense and safety-of-life services. These restrictions have proven fundamental to slowing the rise in the noise floor in these restricted bands to protect safety-of-life in the National Airspace (NAS), and strategic military advantage, particularly for space-based systems. A rising noise floor would undermine the commercial utility of spectrum allocated to existing services, thereby affecting large segments of the information economy.

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As a preliminary matter, many of the entities listed on this letterhead have filed separate comments with the FCC, reflecting individual interests. However, all the Signatories to this letter share certain fundamental principles and conclusions. These are as follows:

FIRST, ultra-wideband (UWB) devices may offer a promising technology that could provide new and innovative services. However, the FCC has received extensive comments on a broad range of interference test results by the National Telecommunications Information Administration (NTIA), Department of Transportation (DoT), universities, and industry that demonstrate that such devices have unique, intentional transmission characteristics that cause significant harmful interference to GPS, other safety-of-life services, wireless services, such as Personal Communication Services (PCS), and to satellite services such as Digital Audio Radio Services (DARS). Test results show adverse interference effects from UWB devices to existing services at power levels substantially below Part 15 levels. The potential for disruption increases with the unlicensed deployment of large scale, overlapping communication networks. Consequently, the Signatories recommend that UWB devices be limited to spectrum above 6 GHz, and below 1 GHz for UWB ground penetrating radars (GPRs), not be allowed to operate in any restricted band, including safety-of-life service bands, and be subject to a licensing regime.

SECOND, an FCC rule-making that broadly affects space, national security, public safety and the economy must ensure that implementation is practical to effectively meet enduring national policy needs, including:

- (i) secure spectrum for evolving space and national security needs, including GPS and satellite communications;
- (ii) the safety of the spectrum foundation of all transportation modes and of the National Airspace (NAS), including bands restricted for safety-of-life services and GPS;
- (iii) the commercial utility of spectrum allocated to existing services requiring a stable noise floor;
- (iv) free spectrum for the safe introduction of UWB devices and networks in an appropriate spectrum segment.

THIRD, The absence of a unified Administration position at the highest policy levels may result in a short-sighted compromise allowing spectrum sharing on an unlicensed basis, under the pretext that a narrow emission mask in practice protects existing services. This would create major risks for space, national security, public safety, and damage the economy. For example—as proposed by some UWB proponents\* --a rule that uses emission masks to allow unlicensed UWB operations to overlay existing services in 1 to 6 GHz will not prove practical or safe for the following reasons:

- (i) an emission mask, whether on a licensed or unlicensed basis, will not address the interference resulting from harmful frequency shifts caused by antenna distortion on simple UWB consumer devices;
- (ii) the commercial opportunities for UWB are in large-scale communications networks and wireless mobile connectivity to the Internet, but narrow emission masks are not a practical solution to allowing such UWB use in shared spectrum because such masks

do not allow enough power for high data rate communications networks; this will result in immediate commercial pressure to erode these emission masks.

In light of the above, the Signatories respectfully request that the National Aeronautics and Space Administration convey our policy and technical concerns to Secretary Evans and the NTIA, respectively. We further request that your agency actively work with the other agencies concerned, including the Departments of Defense, Transportation and Commerce, to support the formation of a unified Administration position and communicate this to the Chairman of the FCC as soon as possible. We believe that this position needs to include maintaining current Part 15 restrictions and finding a way forward for the safe introduction of UWB at higher frequencies. We also believe that the Commission should issue a second NPRM which responds to our concerns and includes all the details of its proposed action.

The Signatories stand ready to actively support you, Mr. Secretary, and the Administration in this endeavor. To this end, we are respectfully requesting a meeting with you to discuss these matters.

Respectfully submitted,

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\* Comments filed by Xtreme Spectrum under ET Docket 98-153 on April 25, 2001  
and in a presentation to the FCC on May 30, 2001